

AMENDMENTS TO THE CLAIMS

1. **(Currently amended)** A polynucleotide ~~Polynucleotide~~ molecule of 601 nucleotides isolated from *Neospora caninum* ~~and characterised by comprising~~ SEQ ID NO: 9, corresponding to NcSAG4 gene, that ~~encompasses~~ comprises an ORF of 522 nucleotides encoding the antigenic protein NcSAG4 of 173 amino acids ~~and characterised by of~~ SEQ ID NO: 10.

2. **(Currently amended)** The polynucleotide ~~Polynucleotide~~ molecule encompassing the sequence of ORF of the NcSAG4 gene according to claim 1, included in an expression vector, ~~and preferably plasmid pcDNA3.1 His-C (Invitrogen), by insertion of said polynucleotide the same amplified by PCR using oligonucleotides FNcSAG4 and ReNcSAG4 characterised by of~~ SEQ ID NO: 11 and SEQ ID NO: 12, respectively.

3. **(Currently amended)** The polynucleotide ~~Polynucleotide~~ molecule comprising ~~encompassing~~ the sequence including from nucleotide 83 to 444 of the ORF of gene NcSAG4 described in claim 1, included in an expression vector, ~~and preferably plasmid pRSET-C, by inserting of said polynucleotide same amplified by PCR using oligonucleotides F85NcSAG4 and Re444NcSAG4, characterised by of~~ SEQ ID NO: 13 and SEQ ID NO: 14, respectively.

4. **(Cancelled)**

5. **(Currently amended)** A method for detecting of *N. caninum* comprising performing PCR or RT-PCR of any fragment of the polynucleotide of Claim 1 using ~~The use of~~ oligonucleotides: SAG4-2, SAG4-3, SAG4-4, 1R5SAG4, 2R5SAG4, 1F3SAG4 and 2F3SAG4, FNcSAG4, ReNcSAG4, F85NcSAG4, and Re444NcSAG4 ~~characterised by of~~ SEQ ID NO: 2, 3, 4, 5, 6, 7, 8, 11, 12, 13 and 14, ~~respectively for the detection of *N. caninum* by PCR or RT-PCR for use as DNA probes or for amplification by PCR of any fragment of the sequence described in claim 1.~~

6. **(Currently amended)** A recombinant vector ~~encompassing~~ comprising the nucleotide sequence ~~characterised by of~~ SEQ ID NO: 9 ~~according to claims 1 to 4.~~

7. **(Currently amended)** Host eukaryote cells transfected with recombinant vector ~~vectors~~ of claim 6.

8. **(Currently amended)** Host prokaryote cells transformed with the recombinant vector ~~vectors~~ of claim 6.

9. (**Currently amended**) ~~A substantially purified or isolated polypeptide substantially purified or isolated selected from (a) antigenic protein NcSAG4 of *N. caninum*, characterised by comprising SEQ ID NO: 10 according to claim 1; (b) chemically or enzymatically modified sequences derived from sequences homologous to SEQ ID NO: 10 conserving their antigenic characteristics chemical or enzyme changes of same; (c) a polypeptide consisting of a substantial portion of protein NcSAG4 polypeptides derived from SEQ ID NO: 10 conserving their antigenic characteristics of *N. caninum* or the same chemically or enzymatically modified; and (d) a recombinant protein including protein or polypeptide of (a), (b) or (c).~~

10. (**Currently amended**) ~~A method for expressing The use of the promoter of gene NcSAG4 to express heterologous genes in cells of *N. caninum* comprising transfecting said cells with transfected by gene constructions prepared with the above a promoter of gene NcSAG4.~~

11. (**Currently amended**) ~~A method for diagnosing Use of polynucleotide molecules described in claims 1 to 5 for the diagnosis of chronic infection by *N. caninum* from tissues or fluids from infected animals infected comprising performing by PCR or RT-PCR, or hybridization *in situ* with DNA probes for the polynucleotide sequence of Claim 1 or any other detection method based on nucleic acids of the parasite.~~

12. (**Currently amended**) ~~A method for Use of the polypeptides described in claim 9 for the serological diagnosis of chronic infection by *N. caninum* by enzyme immunoassay (ELISA), radioimmunoassay (RIA), immunoblot or any other method based on the antigenicity of the these polypeptides of Claim 9.~~

13. (**Currently amended**) ~~A method Use of monoclonal antibodies or specific polyclonal sera against the polypeptides described in claim 9, for the diagnosis of chronic infection by *N. caninum* comprising performing by competition ELISA using monoclonal antibodies or specific polyclonal antisera against polypeptides of Claim 9.~~

14. (**Currently amended**) ~~A method Use of monoclonal antibodies or specific polyclonal sera against the polypeptides described in claim 9, for the diagnosis of chronic infection by *N. caninum* in tissues from animals comprising performing by immunohistochemistry, immunofluorescence or any other method based on the detection of *N. caninum* the parasite by specific polyclonal antisera against polypeptides of Claim 9 the above serum.~~

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15. **(Currently amended)** An immunogenic composition comprising a ~~encompassing~~: (a) a polypeptide ~~described in~~ of claim 9; or (b) a polynucleotide molecule according to claim ~~claims~~ 1 ~~to~~ 4 or; (c) a recombinant vector of ~~as described in~~ claim 6 or; (d) host cells of ~~transfected according to~~ claim 7; or (e) host cells of ~~transformed according to~~ claim 8, formulated as vaccine against neosporosis.

16. **(Currently amended)** ~~An~~ The immunogenic composition according to claim 15, ~~encompassing~~ further comprising an adjuvant or a cytokine ~~one or several cytokines~~.

17. **(Currently amended)** A method of preparation of an immunogenic composition of Claim 15 comprising combining ~~encompassing a combination~~: (a) a polypeptide ~~described in~~ of claim 9; or (b) a polynucleotide molecule according to claim ~~claims~~ 1 ~~to~~ 4 or; (c) a recombinant vector of ~~as described in~~ claim 6 or; (d) host cells of ~~transfected according to~~ claim 7; or (e) host cells of ~~transformed according to~~ claim 8 with a an adjuvant or a cytokine; ~~formulated as vaccine against neosporosis~~.

18. **(Currently amended)** A vaccination kit for mammals against neosporosis encompassing a container including an immunogenic composition ~~formulated as vaccine according to claims of claim~~ of claim 15, 16, and 17.

19. **(New)** The polynucleotide of Claim 2, wherein the expression vector is a plasmid pcDNA3.1-His-C.

20. **(New)** The polynucleotide of Claim 3, wherein the expression vector is a plasmid pRSET-C.